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Sandia National Laboratories

Albuquerque, New Mexico 87185

date: December 22, 1987

to: Distribution

Exemption 6

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from:

5111

CENTRAL TECH. SEC.

subject: Minutes from the December 14, 1987 MC2935 Annealed Wand Shaft Review

A meeting was held on December 14, 1987 to provide a director level status review of the annealed shaft problem. The meeting focused on component characterization and system safety assessments. A brief summary is as follows:

Component Characterization

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[Org. 2543) provided a summary of all the activities that have been done to characterize the MC2935 switch response during shock environments. The material that he presented is summarized in his final report distributed on December 10, 1987.

System Safety AssessmentsW31

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[Org. 5114) stated that he was just beginning to work the annealed wand shaft problem with respect to the W31. He has been given serial numbers of the suspect firing sets and is presently determining their location. In addition, he is going to obtain support from the structural analysis division to determine the thresholds for mechanical failure of the W31.

B83

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[Org. 8162) presented the status of the B83 safety assessment to date. The following is an excerpt from his memo dated December 18, 1987 summarizing the B83 assessment:

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3 pages

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This is true for the following reasons: (1) A number
of unlikely conditions must occur _____
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Some might argue that our safety theme is no longer
independent of the probability of event occurring
during an accident. I agree, but isn't this the same
argument _____
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Exemption 7

The safety of the B83 in impact environments is
superior to most all systems (the W84 and W87 may
be safer because of MSAD).

Let me explain this in a roundabout way. The weak
link/strong link - exclusion region nuclear safety
design philosophy is an excellent way to make safety
rationale independent of environments. It has added
logic to earlier, confusing system and environment
dependent arguments _____
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We will attempt, in the next few months, to determine if the distortions and g-levels generated within the bomb, prior to the loss of exclusion regions, are great enough to ensure destruction of key components. We are not optimistic that we will succeed in this effort. Our main emphasis will be analytical, but we anticipate at least one test for model verification.

B61

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[Org. 5111] presented a summary of the B61 system safety assessment to date. He noted that the B61-7 safety theme for abnormal lateral impact shock environments states:

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He stated that tests have revealed the level of shock

Two activities, analysis and testing, are required. The purpose of the analysis is to obtain a better understanding of the system level structural response during shock environments and to define test parameters for a system level test to verify the safety theme. The purpose of the testing is to benchmark the system model and experimentally verify the system safety theme.

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Org. 1521) is providing the analytical support and he presented a summary of the B61-7 system modeling effort to date.

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working to predict the system level input required to

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The initial modeling effort and proposed system level verification test are for a simplified abnormal impact scenario--lateral impact into a hard (concrete) target. The intent is to define and experimentally verify a system safety theme for a simplified case and then address the more complex abnormal environment scenarios using further analysis and probability arguments.

Action Items

1. Determine if LANL upper management will allow an "official" lab statement to be made regarding the posttest operational status of their assembly.
2. Provide ^{Exemption 6} with an estimate as to when the system safety assessments will be completed (Orgs. 5114 and 8162 by 1/15/88).

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